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### Naval Health Research Center

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Preserving the psychological health of U.S. military service members and their families is of paramount concern to military leaders, medical providers, and the general public. One key step in protecting the psychological health of service members is the ability to recognize the presence and correlates of mental health problems through routine monitoring and evaluation. When expeditionary Navy sailors deployed to combat zones in Afghanistan and Iraq were identified as a population that could potentially be at risk for mental health problems, the Behavioral Health Needs Assessment Survey (BHNAS) instrument was developed to monitor their mental health. The BHNAS is an anonymous survey that assesses the mental health, morale, and deploymentrelated stressors of Navy personnel who deploy to combat zones. The BHNAS was first developed in response to a tasker that was issued by the Chief of Naval Operations. First administered to expeditionary Navy sailors in December 2006, the BHNAS instrument was designed to closely parallel the Army Mental Health Advisory Team (MHAT) survey. Like the Army MHAT, the Navy BHNAS assesses mental health problems as well as a variety of other content areas, including attitudes toward leadership, unit cohesion, combat experiences, deployment-related stressors, traumatic brain injury, and sleep problems. This report provides detailed information about the ninth version of the BHNAS instrument, including the content areas, scales, and items that make up the survey. The sources of survey items and scales are provided, and changes in content that have occurred across versions of BHNAS are described. The BHNAS has provided Navy line and medical leadership with a comprehensive snapshot of expeditionary sailors' psychological health.

Abstract

#### Introduction

#### **Background**

Since December 2006, the Naval Health Research Center (NHRC) has conducted the Behavioral Health Needs Assessment Survey (BHNAS). The BHNAS is an anonymous survey designed to assess the mental health, morale, and deployment-related stressors of Navy personnel who are deployed to combat zones. The BHNAS was first developed in response to a tasker that was issued by the Chief of Naval Operations (CNO) in August 2006. The BHNAS instrument was designed to closely parallel the U.S. Army Mental Health Advisory Team (MHAT) survey.

Starting in 2003, the Army MHAT has been conducting survey-based assessments to examine the mental health, morale, and deployment-related stressors of soldiers and Marines deployed in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The Army's MHAT and Joint Mental Health Advisory Team (J-MHAT) efforts have resulted in a series of reports that have provided valuable information to leaders and policy makers about the status of contemporary warfighters (J-MHAT, 2011; MHAT, 2008, 2009). Results from the MHAT surveys have helped the Army to make evidence-based decisions about combat stress issues, resulting in new predeployment training programs, expanded training of Army health care providers, and other changes designed to protect the physical and mental health of deployed military personnel.

Because of the success of the Army MHAT surveys, and because sailors were never included as respondents, the CNO issued a Blue-Gold tasker to the Vice Chief of Naval Operations directing the Navy to conduct its own assessments of deployed Navy personnel, similar to the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). The CNO directed the Navy to focus these assessments on expeditionary sailors deployed to combat locations associated with Overseas Contingency Operations (formerly called the Global War on Terror).

The BHNAS was designed to be administered to Navy expeditionary sailors (including Individual Augmentees [IAs]) who deploy "boots on the ground" to locations in Iraq and Afghanistan. Expeditionary sailors are deployed to ground combat and security assignments around the world. In combat settings such as Iraq and Afghanistan, expeditionary sailors provide a host of ground-based services, including medical, construction, antiterrorism, detainee operations, training, nation building, and other critical functions. Despite the crucial role they play in current U.S. military operations, relatively little is known about the mental health, morale, and stressors experienced by this military population.

IAs form an important part of the Navy's expeditionary forces who have deployed to OIF and OEF. In recent years (during OIF and OEF), IAs made up nearly half of the entire population of Navy expeditionary sailors. Navy IAs are sailors who leave their assigned units to deploy individually or with a small group, instead of deploying with their ship, squadron, or other parent unit. Navy IAs are often faced with unique challenges due to the novel work environment, separation from parent units and shipmates, and requirements to work both outside occupational specialties and with joint services.

The BHNAS instrument was modeled directly after the Army MHAT surveys, which have been used to assess OIF and OEF soldiers since 2003. The Army MHAT surveys were based on the Land Combat Survey, which was developed by the Walter Reed Army Institute of Research (Bliese & Castro, 2003; Riviere, 2008). The Land Combat Survey was later renamed the Army MHAT (J-MHAT, 2011; MHAT, 2008, 2009). A large amount of published research by the Army has been based on results from the Army MHAT surveys (Castro & McGurk, 2007; Hoge et al., 2004; Hoge, Terhakopian, Castro, Messer, & Engel, 2007; J-MHAT, 2011; MHAT, 2008, 2009).

Like the Army MHAT, the Navy BHNAS assesses mental health problems and a variety of content areas that may have an important impact on the mental health of deployed service members. These content areas include topics such as attitudes toward leadership, unit cohesion, combat experiences, deployment-related stressors, traumatic brain injury (TBI), and sleep problems. Many of the factors assessed by the BHNAS are those that the research literature suggests may play an important role in military mental health, morale, and well-being (Cabrera, Hoge, Bliese, Castro, & Messer, 2007; Castro & McGurk, 2007; Fontana & Rosenheck, 1999; Iversen et al., 2008; Vasterling, Constans, & Hanna-Pladdy, 2000; Vogt, Pless, King, & King, 2005).

The BHNAS was designed to be given to military personnel while they are deployed in a theater of combat. At the time of this report, there had been nine different versions of the BHNAS; the most current version of the survey was BHNAS 9 (administered from July 2012 through December 2012). The first version of the survey was administered in December 2006. The content of the BHNAS instrument has changed over time, both as MHAT content evolved and as the BHNAS findings and other research identified key factors impacting the mental health and morale of service members. However, across different versions of the survey, a certain degree of core content was maintained, so that results from different survey administrations could be compared. Additionally, a certain amount of core content between BHNAS and MHAT was maintained to allow for comparability of results.

#### **Procedures**

Since December 2006, the BHNAS instrument has been used to systematically collect data from sailors. Although some of the procedures used in administering the survey have varied somewhat since the start of the BHNAS, most of the methods have been consistent across the history of the project. Since the first BHNAS administration, the primary target population for the survey has been Navy expeditionary sailors who deploy on the ground to combat zones. Throughout the project, all of the BHNAS respondents have belonged to military units who were assigned to primary deployment locations in Iraq (OIF) or Afghanistan (OEF). Since 2008, the BHNAS has only targeted sailors assigned to units in Afghanistan.

One major change in the BHNAS procedures that occurred several years after the project's start involved the creation and use of Navy Mobile Care Teams (MCTs) in the data collection process. Prior to 2010, the BHNAS was administered by ad hoc teams of researchers who traveled to Iraq and Afghanistan for the purpose of data collection. Starting with BHNAS 4 in 2010, the BHNAS has been administered by members of more formalized Navy MCTs. MCTs were established by

the Navy Bureau of Medicine and Surgery to provide psychological assessment and support to Navy IAs. MCTs are part of the Navy's Combat Operational Stress Control (COSC) program, whose mission is to support and preserve the psychological health of combat-deployed service members.

Since January 2010, successive MCTs have administered the BHNAS as part of their deployment mission. Each MCT consists of three to five Navy service members and is deployed to Afghanistan for 6–8 months. When the outgoing team leaves the combat zone, a new MCT is deployed to replace the outgoing team. To accomplish the mission of the BHNAS data collection, the MCTs travel around the Afghanistan provinces, while simultaneously providing psychological support. As of BHNAS 9, six different MCTs have administered the survey.

The BHNAS is typically administered in group settings at the respondents' primary deployment location (e.g., Afghanistan); however, some BHNAS respondents have taken the survey at U.S. military sites in Kuwait, through which they were routed when returning from their main deployment site. After being convened for a briefing about the survey, participants are invited to complete the BHNAS instrument, which takes about 30–60 minutes. The survey is anonymous; no personal identifiers (names, SSNs) are requested. Participation is voluntary, and participants are informed that they can skip questions that they do not want to answer, and that they also have the right to cease participation at any time. For the majority of the survey questions, participants are asked to respond with their current deployment in mind. Military unit commanders are not present during administration of the survey.

The survey has generally been completed in paper-and-pencil form. However, since 2010, respondents have had the option of having the survey emailed to them, completing it on the computer, and returning it to the survey team electronically. Starting in 2010, the capability of processing and analyzing the BHNAS data in the field (in theater) was established. This has allowed leaders of units serving in theater to be provided with results for their own unit or command in a timely fashion.

#### **Objective**

The objective of this report is to provide detailed information about the ninth version of the BHNAS instrument, including the specific items, scales, and content areas that make up the survey. The sources of survey items and scales are provided in this report, and changes in content that have occurred across versions of the BHNAS are described.

#### **Description of Survey Items and Scales**

#### **Overview of the BHNAS Instrument**

The ninth version of the BHNAS instrument consists of 196 survey items. The survey assesses a broad range of topics, including mental health problems, combat exposure, deployment-related stressors, TBI, unit cohesion, attitudes toward leadership, sleep problems, and mental health care stigma. The primary content domains covered by BHNAS 9 are shown below:

#### **Topics Covered by the BHNAS Instrument**

- Demographics
- Military and deployment information
- Mental health disorders (posttraumatic stress disorder [PTSD], depression, and anxiety)
- Suicidal ideation
- Treatment for mental health problems
- Psychotropic medication use
- Stress levels at work
- Operational stress control training
- TBI
- Pain medication use
- Aggressive behavior
- Combat exposure
- Experiences of intense fear, helplessness, or horror
- Deployment-related stressors
- Mental health stigma and barriers to care
- Amount of sleep and sleep deficit
- Sleep difficulties
- Sleep medication use
- Personal and unit morale
- Unit cohesion
- Attitudes toward leadership
- Positive effects of deployment
- Navy support during deployment

Details about the survey items used to assess each of these topics on the BHNAS instrument are presented in the sections that follow. The entire BHNAS 9 is presented in the Appendix.

#### **Demographics**

The following demographic factors are assessed on the BHNAS 9 instrument: sex, age, race/ethnicity, and marital status.

#### **Military and Deployment Information**

A number of military characteristics of the respondents are assessed on the survey. These include service branch (Navy, other), component (active duty vs. reserve), enlisted versus officer status, military paygrade or rank, military occupation (enlisted rating or officer designator), years in the military, and number of prior deployments since September 11, 2011. The survey asks respondents to provide information about their current deployment, including the primary location, the name of their unit, their deployment status (i.e., deployed as an IA, deployed as a Global War on Terror Support Assignment [GSA], deployed with home unit), the number of months they have been in theater, and the expected length of the deployment (in months). The survey also asks respondents if they were re-missioned or unofficially reassigned after they arrived at their current deployment station (yes/no). The following military and deployment information is assessed on the survey:

- Service branch (U.S. Navy, Other)
- Component (active duty, activated reservist)
- Enlisted/officer/warrant officer
- Paygrade/rank
- Military occupation (enlisted rating or officer occupation)
- Years in the military
- Number of prior deployments (since September 11, 2011)
- Primary location of current deployment (country and site)
- Name of unit
- Deployment status (i.e., deployed as an IA, GSA, with home unit)
- Date they arrived in theater
- Number of months in theater on deployment (at the time they completed the survey)
- Expected length of the deployment (in months)
- Remissioning status
- Deployment assignment/mission

The survey item that assesses respondents' deployment assignment/mission, reads as follows: "What type of mission best describes your unit's current deployment assignment?"

This item was first introduced in BHNAS 4, with eight response options. The number of response options presented with this item has increased over time; BHNAS 9 uses the 12 response options shown below:

- ETT (Embedded Training Team)
- PRT (Provincial Reconstruction Team)
- Civil Affairs
- Command/Staff (Admin, JOC, TOC, etc.)
- Medical
- Detainee Operations
- Aviation/E-Warfare
- Construction

- EOD (Explosive Ordnance Disposal)
- Supply/Logistics
- Postal Platoon
- Other

#### **Mental Health Disorders**

The BHNAS includes a section that assesses symptoms of three mental health problems: PTSD, depression, and anxiety. The scales used in the BHNAS to assess mental health problems are self-report symptom rating scales; they assess severity of symptoms and are not typically used to make definitive clinical diagnoses. On BHNAS 9, PTSD symptoms are assessed using the PTSD Checklist-Civilian Version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993). Symptoms of depression and anxiety are measured using items adapted from the PRIME-MD Patient Health Questionnaire (PHQ; Spitzer, Kroenke, & Williams, 1999).

The scales and scoring procedures used in BHNAS 9 to assess PTSD, depression, and anxiety are the same as those used in the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). Additionally, the scales used to assess these mental health problems have been used consistently in all versions of the BHNAS.

#### Posttraumatic Stress Disorder

On BHNAS 9, the PCL-C is used to assess PTSD symptoms (Weathers et al., 1993). This is the most widely used measure of PTSD in studies of military personnel. This validated measure contains 17 items corresponding to symptom criteria for PTSD. Respondents rate each item using a five-point scale ( $1 = Not \ at \ all \ to \ 5 = Extremely$ ). The PCL-C has demonstrated good psychometric properties (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Forbes, Creamer, & Biddle, 2001; Ruggiero, Del Ben, Scotti, & Rabalais, 2003; Weathers et al., 1993). High test-retest reliability has been reported at .96 for 2–3 days and .88 for 1 week (Blanchard et al., 1996; Ruggiero et al., 2003).

The military and civilian versions of the PCL contain identical items; the only difference is that the PCL-C instructs participants to respond to the list of items with their general life experiences in mind (which can include deployments), whereas the military version (PCL-M) asks participants to respond with only their stressful military experiences in mind. Consistent with most research on military samples, we chose to use the PCL-C because we wanted to gauge participants' reactions to their overall life stressors, both military and nonmilitary.

To screen positive for PTSD, respondents must attain a total score of 50 or greater on the PCL-C (which has a range of 17 to 85 points). In addition, respondents have to endorse at least one intrusion symptom, three avoidance symptoms, and two hyperarousal symptoms, each present at a level of moderate or higher during the past month. This is the same scoring method used in the Army MHAT survey (J-MHAT, 2011; MHAT, 2008, 2009) and in research by Hoge and colleagues (e.g., Cabrera et al., 2007; Hoge et al., 2004).

#### Depression

The scale used on BHNAS 9 to measure depression was adapted from the PHQ depression scale (PHQ-9; Spitzer et al., 1999). The PHQ-9 is a widely used scale that has demonstrated excellent psychometric properties and convergent validity with other scales that assess depression (Lowe et al., 2004), as well as convergence with clinical interviews used to diagnose depression (Gilbody, Richards, Brealey, & Hewitt, 2007).

For the depression items, BHNAS 9 uses a different item preface than the original PHQ-9. Whereas the original PHQ-9 asks respondents to indicate how often each symptom was experienced in the past 2 weeks, the BHNAS uses a time frame of 4 weeks. Also, the wording of one of the original PHQ-9 items was modified slightly for use on the BHNAS. The BHNAS also uses a different scoring algorithm to determine probable depression than was used by the developers of the PHQ-9. However, the BHNAS uses the same exact items, response options, and scoring procedures used by the Army MHAT (J-MHAT, 2011; MHAT, 2008, 2009).

The depression items on the BHNAS are presented with four response options:  $0 = Not \ at \ all$ , 1 =Few or several days, 2 = More than half the days, and 3 = Nearly every day. These are the same options used by the developers of the PHQ-9 depression scale (Spitzer et al., 1999).

Specifically, the following nine items are used to assess depression on BHNAS 9:

- Little interest or pleasure in doing things  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .
- Feeling down, depressed, or hopeless (0 = Not at all to 3 = Nearly every day).
- Trouble falling or staying asleep, or sleeping too much  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every$ day).
- Feeling tired or having little energy  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .
- Poor appetite or overeating  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .
- Feeling bad about yourself—or that you are a failure or have let yourself or your family down (0 = Not at all to 3 = Nearly every day).
- Trouble concentrating on things, such as reading the newspaper or watching television (0 = Not at all to 3 = Nearly every day).
- Moving or speaking so slowly that other people could have noticed  $(0 = Not \ at \ all \ to \ 3 =$ *Nearly every day*).
- Thoughts that you would be better off dead or of hurting yourself in some way (0 = Not)at all to 3 = Nearly every day).

In addition to the depression items shown above, the following "functional impairment" item is also used to determine probable depression on the BHNAS:

• If you checked off ANY of the above problems (question 32a–m), how difficult have these problems made it for you to perform your duty or get along with others? (0 = Not at)*all difficult* to 3 = Extremely difficult).

To screen positive for probable depression on the BHNAS, respondents must meet all three of the following criteria. First, respondents must report that they were bothered by either "little

interest or pleasure in doing things" or "feeling down, depressed or hopeless" with a frequency of at least "more than half the days" during the past 4 weeks. Second, respondents must indicate that at least five of nine specific depression items were present during the past 4 weeks. For all but one of these items, a symptom is counted as present if it occurred at least "more than half the days" in the past 4 weeks. Because of its greater severity, one of the nine depression symptoms, which assesses suicidal ideation ("Thoughts that you would be better off dead or of hurting yourself in some way"), is scored as present if it occurred on "few or several days" or more frequently in the past four weeks (i.e., any option other than "not at all"). Finally, respondents must indicate (on the functional impairment item) that their symptoms made it "very difficult" or "extremely difficult" to perform their duties or get along with other people.

#### Anxiety

The scale used to assess anxiety on BHNAS 9 was adapted from the "Other Anxiety Symptoms" module of the PHQ (Spitzer et al., 1999). Like the depression items, the anxiety items on the BHNAS are presented with four response options: 0 = Not at all, 1 = Few or several days, 2 = RotMore than half the days, and 3 = Nearly every day.

Specifically, the following items are used to assess anxiety on BHNAS 9:

- Feeling nervous, anxious, on edge, or worrying a lot about different things  $(0 = Not \ at \ all$ to 3 = Nearly every day).
- Trouble falling or staying asleep, or sleeping too much (0 = Not at all to 3 = Nearly every)
- Feeling tired or having little energy  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .
- Trouble concentrating on things, such as reading the newspaper or watching television (0 = *Not at all* to 3 = *Nearly every day*).
- Feeling restless so that it's hard to sit still  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .
- Becoming easily annoyed or irritable  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .
- Muscle tension, aches, or soreness  $(0 = Not \ at \ all \ to \ 3 = Nearly \ every \ day)$ .

In addition to the anxiety items shown above, the following functional impairment item (the same item as used for depression) is used to determine who screens positive for probable anxiety on the BHNAS:

• If you checked off ANY of the above problems (question 32a–m), how difficult have these problems made it for you to perform your duty or get along with others? (0 = Not at)all difficult to 3 = Extremely difficult).

BHNAS 9 uses a different scoring algorithm to assess anxiety than was used by the developers of the PHQ. However, the BHNAS uses the same items, response options, and scoring procedures used by MHAT (J-MHAT, 2011; MHAT, 2008, 2009) and in other research by Hoge and colleagues (Hoge et al., 2004). Also, the items and procedures used to assess anxiety in the BHNAS are identical to those used in the Department of Defense (DoD) Survey of Health Related Behaviors (Bray et al., 2006; Bray et al., 2009).

To screen positive for probable anxiety, respondents must meet all three of the following criteria. First, they must report that they had been "feeling nervous, anxious, on edge, or worrying a lot about different things" with a frequency of at least "more than half the days" during the past 4 weeks. Second, they must report that at least three of six anxiety symptoms were present at least "more than half the days" during the past 4 weeks. Third, respondents must indicate that their symptoms made it "very difficult" or "extremely difficult" to perform their duties or get along with other people.

#### **Suicidal Ideation**

On the BHNAS, suicidal ideation is assessed using a single item; this item is actually part of the scale that is used to assess depression (modified PHQ-9, described above). Because of current interest in the topic of suicide, the BHNAS results for this single item are typically reported separately. Like the other depression items, the suicide item is preceded by the following item stem, "Over the LAST 4 WEEKS, how often have you been bothered by any of the following problems?" The suicidal ideation item is:

Thoughts that you would be better off dead or of hurting yourself in some way (0= Not at all to 3 = Nearly every day).

All responses to this item other than "not at all" are scored as positive for suicidal ideation. This item is also used on the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). It has been used on all versions of the BHNAS.

#### **Treatment for Mental Health Problems**

A single item is used on BHNAS 9 to assess respondents' level of interest in receiving help for mental health, emotional, and related problems. This item was drawn from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). The item has been used on all versions of the BHNAS:

• Are you currently interested in receiving help for a stress, emotional, alcohol, or family problem? (yes/no/no such problem).

Respondents' experiences regarding mental health care sought or received are assessed with a single item, which was developed specifically for the BHNAS. The item stem reads as follows, "Which best describes your experience seeking help for a stress, emotional, alcohol, or family problem(s)?" This item is presented with the following response options:

- No such problem
- I wasn't interested in receiving help
- I wanted and received help from a non-medical person
- I wanted and received help from a medical person
- I wanted and received help from both
- I wanted but did not seek help
- I wanted and sought help, but have not received any

This item was first introduced in BHNAS 6 and has been used on all subsequent versions of the survey. It does not appear on the Army MHAT surveys.

#### **Psychotropic Medication Use**

Use of psychotropic medication is measured on BHNAS 9 with a single item, which was drawn from the Army MHAT surveys:

 Have you taken any medication for a mental health or combat stress problem during this deployment? (yes/no).

Respondents who answer "yes" to this item are also asked to specify the medication(s) that they used. This item has been used on all versions of the BHNAS.

#### Stress Levels at Work

The following question is used on BHNAS 9 to assess stress levels at work:

 During this deployment, how much stress have you experienced at work or while carrying out your military duties?  $(0 = None \ at \ all \ to \ 3 = A \ lot)$ .

This item was adapted from the DoD Survey of Health Related Behaviors (Bray et al., 2006; Bray et al., 2009). It was first introduced in BHNAS 4, using three response options instead of four. Starting with BHNAS 5, this item has been used with four response options  $(1 = None \ at$ all, 2 = A little, 3 = Some, 4 = A lot). It has been used on all subsequent versions of the BHNAS. This item does not appear on the MHAT surveys.

#### **Operational Stress Control Training**

A series of questions on BHNAS 9 ask respondents about training they may have received on the topic of operational stress control. The specific items addressing this topic have not been consistent across all versions of the BHNAS. Starting with BHNAS 7, the following five items have been used to assess operational stress control training:

- I have received training in managing the stress of deployment and/or combat in the past year (yes/no).
- I have assisted one or more unit members with a mental health problem in the past year
- I helped a unit member who had a mental health problem get professional help (yes/no).
- I am confident in my ability to help individuals get mental health assistance (1 = Strongly)*disagree* to 5 = Strongly agree).
- The training in managing the stress of deployment and/or combat was adequate (1 = *Strongly disagree* to 5 = Strongly agree).

Some of these items were drawn from or adapted from items on the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). The last item in the item set above ("The training in managing the stress of deployment...") was developed specifically for the BHNAS. Because of their disparate content, these items are not used to form a scale; results for each item are reported separately.

#### **Traumatic Brain Injury**

The ninth version of the BHNAS includes a section that assesses various aspects of TBI. One set of four questions included on BHNAS 9 was designed to align with guidance set forth in Directive-Type Memorandum 09-033 (DTM; DTM 09-033; Deputy Secretary of Defense, 2010). This Memorandum details specific head trauma-related events that, if experienced by military personnel, require evaluation for TBI by a medical professional. This set of questions was adapted from those used on the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). These four items are:

- During this deployment, how many times were you inside a vehicle when it was damaged by a blast? (1 = 0 times to 3 = 3 or more times).
- During this deployment, how many times were you within 50 meters of a blast explosion? (1 = 0 times to 3 = 3 or more times).
- Did any event during this deployment involve a blow or jolt to your head? (yes/no).
- Did any event during this deployment involve losing consciousness from being knocked out? (yes/no).

Consistent with the DTM directive, respondents who indicate on the BHNAS that they experienced any one of these four events are classified as requiring a TBI screen. Although the BHNAS has included some assessment of TBI since its inception, the specific set of items shown above (which allow approximation of TBI rates consistent with the DTM directive) were not included in the survey until BHNAS 6. Since BHNAS 6, this set of four core TBI items has been used consistently on all versions of the survey.

On the ninth version of the BHNAS, two items ask respondents if they were evaluated or diagnosed with TBI:

- Did any event during this deployment involve evaluation by any medical professional for TBI or concussion? (yes/no).
- Did any event during this deployment involve a positive diagnosis for a TBI or concussion? (yes/no).

The two items shown above have been included in the survey since BHNAS 5. (The item addressing evaluation by a medical professional for TBI or concussion also appeared in BHNAS 4.)

In addition to the items described above, several additional items concerning TBI or head injury appear on BHNAS 9:

- Did any event during this deployment involve an injury to your head? (yes/no).
- Did any event during this deployment involve being dazed, confused or "seeing stars?" (yes/no).
- Did any event during this deployment involve not remembering the injury? (yes/no).
- Did any event during this deployment involve losing consciousness but not from being knocked out? (yes/no).

The BHNAS 9 instrument also includes three other items that ask respondents how often they experienced other types of injuries during the current deployment:

- During this deployment, how many times were you injured from blast/explosion, fragment/shrapnel, or bullet? (1 = 0 times to 3 = 3 or more times).
- During this deployment, how many times were you injured from [some] other combatrelated incident (fall, etc.)? (1 = 0 times to 3 = 3 or more times).
- During this deployment, how many times were you injured from [some] other (noncombat) work or sports incident? (1 = 0 times to 3 = 3 or more times).

The set of items shown above was added to the survey in BHNAS 5 and has been used on all subsequent versions.

#### **Pain Medication Use**

The pain medication items used in the ninth version of the BHNAS were drawn from the Army MHAT survey (J-MHAT, 2011). These survey items were first added to BHNAS 5. Pain medication use was not assessed on earlier versions of the survey. On BHNAS 9, respondents are asked the following:

• If you have chronic pain that occurs constantly (daily) or frequently flares up (across 3 or more months), what types of medication are you taking for your pain? (Please mark all that apply). Respondents can also endorse "Not applicable; no chronic pain" or "Have chronic pain, but taking no medications."

Respondents who report that they are taking a pain medication are given the option to select any of the following:

- Over-the-counter drugs (including Aspirin, Tylenol, Motrin, Ibuprofen, Aleve)
- Prescription painkillers that are not opioids (including Celebrex, Vioxx, Bextra, topical lidocaine)
- Prescription opioid/narcotic painkiller (including OxyContin, Percocet, Vicodin, Tramadol, Tylenol with Codeine, Methadone)
- Other (specify all)
- Unknown what medication(s)

Regarding the use of pain medications, respondents are also asked:

• Were the medications prescribed in theater? (yes/no/not applicable--no pain medications or not prescribed).

#### **Aggressive Behavior**

Aggressive behavior is assessed on BHNAS 9 using four items. Participants are asked to indicate how often they engaged in each behavior during the past month. The item stem for this set of items is: "How often in the PAST MONTH did vou:"

- Get angry at someone in your unit and yell or shout at them? (1 = Never to 5 = Five or 1)more times).
- Get angry at someone in your unit and kick or smash something, slam the door, punch the wall, etc.? (1 = Never to 5 = Five or more times).
- Threaten someone in your unit with physical violence? (1 = Never to 5 = Five or more)times).
- Get into a fight with someone in your unit and hit the person? (1 = Never to 5 = Five or 1 = Never to 1 = Never tomore times).

The set of four items that assess aggressive behavior has been used on all versions of the BHNAS since its inception. The items are identical to those used in the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). The same set of items has also been used in research by Killgore and colleagues (Killgore et al., 2008).

#### **Combat Exposure**

Across versions of the BHNAS, combat exposure has been measured using between 36 and 39 items that assess a variety of specific combat experiences. These items were compiled from the set of combat exposure items used by Hoge and colleagues (2004), and in the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). BHNAS 9 uses the following 37 items to assess combat exposure:

- Being attacked or ambushed
- Seeing destroyed homes and villages
- Receiving small arms fire
- Witnessing an accident that resulted in serious injury or death
- Witnessing violence within the local population or between ethnic groups
- Seeing dead or seriously injured Americans
- Knowing someone seriously injured or killed
- Participating in demining operations
- Improvised explosive device (IED) or booby trap exploded near you
- Working in areas that were mined or had IEDs
- Having hostile reactions from civilians
- Disarming civilians
- Being in threatening situations where you were unable to respond because of rules of engagement

- Shooting or directing fire at the enemy
- Calling in fire on the enemy
- Engaging in hand-to-hand combat
- Clearing/searching homes or buildings
- Clearing/searching caves or bunkers
- Being wounded/injured
- Seeing ill/injured women or children who you were unable to help
- Receiving incoming artillery, rocket, or mortar fire
- Being directly responsible for the death of an enemy combatant
- Having a member of your own unit become a casualty
- Had a close call, dud land near you
- Had a close call, equipment shot off your body
- Had a close call, was shot or hit but protective gear saved you
- Encountering sniper fire
- Seeing a unit member blown up or burned alive
- Had a buddy shot or hit who was near you
- Informed unit members or friends of a unit member's death
- Saved the life of a Service Member or civilian
- Seeing dead bodies or human remains
- Handling or uncovering human remains
- Being physically moved or knocked over from an explosion
- Physically assaulted by another U.S. Service Member
- Harassed, ridiculed, or hazed by another U.S. Service Member
- Witnessing brutality or mistreatment toward noncombatants

For each combat exposure item, participants are asked to indicate how often they experienced the event using a five-point response scale (1 = Never to 5 = 10 or more times).

Twenty-nine of these combat experience items have been consistently assessed across all versions of the BHNAS. For these common core items, an overall combat exposure score is created by summing across the 29 items. Higher numbers on the scale indicate a higher level of combat exposure. Results for the additional combat items (those that fall outside the common core) are examined individually.

Researchers (e.g., Fontana & Rosenheck, 1998) have suggested that it may be useful to categorize combat experiences into categories. Similarly, Wilk and colleagues (Wilk et al., 2010) demonstrated that combat items, such as those asked in the Army MHAT surveys and in the BHNAS, can be reliably sorted into categories. These combat exposure categories or factors may be useful in terms of explaining behavioral health outcomes.

In recent BHNAS reports, BHNAS combat items have been classified into categories similar to those used by Wilk and colleagues (2010). These six categories (shown below) are: fighting, killing, threat to oneself, death or injury of others, atrocities, and positive experiences. These combat categories are presented in the table below, along with information on the items that were used to form these categories across different versions of the BHNAS.

#### Composition of Combat Experience Categories

(1) Fighting Being attacked or ambushed 1–9 Receiving small arms fire 1–9 Disarming civilians 1–9 Shooting or directing fire at the enemy 1–9 Calling in fire on the enemy 1–9 Engaging in hand-to-hand combat 1–9 Engaging in hand-to-hand combat 1–9 Clearing/searching homes/buildings 1–9 Clearing/searching caves/bunkers 1–9  (2) Killing Being directly responsible for death of an enemy combatant None Feeling responsible for death of a noncombatant None Feeling responsible for death of U.S. or ally personnel 1–3  (3) Threat to oneself Participating in demining operations 1–9 Improvised explosive device (IED) or booby trap exploded near you Working in areas that were mined or had IEDs 1–3, 5–9 Threatening situations where unable to respond because of rules of engagement Being wounded or injured 1–9 Had a close call, dud land near you 1–9 Had a close call, dud land near you 1–9 Had a close call, was shot/hit but protective gear saved you 1–9 Had a buddy shot or hit who was near you 1–9 Had a buddy shot or hit who was near you 1–9 Knowing someone seriously injured Americans 1–9 Knowing someone seriously injured Americans 1–9 Knowing someone seriously injured or killed 1–9 Having a member of your own unit become a casualty 1–9 Seeing dead bodies or human remains 1–9 (5) Atrocities Witnessing violence within the local population or between ethnic groups Witnessing brutality or mistreatment toward noncombatants 1–3, 7–9 (6) Positive experiences Saved the life of a Service Member or civilian 1–9	Combat experience	Itomo in autogomy	BHNAS
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(4) Death or injury of others  Witnessing an accident that resulted in serious injury or death Seeing dead or seriously injured Americans 1–9 Knowing someone seriously injured or killed 1–9 Having a member of your own unit become a casualty 1–9 Seeing dead bodies or human remains 1–9 Handling or uncovering human remains 1–9  (5) Atrocities  Witnessing violence within the local population or between ethnic groups Witnessing brutality or mistreatment toward noncombatants 1–3, 7–9  (6) Positive experiences  Saved the life of a Service Member or civilian  1–9  1–9  1–9  1–9  1–9  1–9  1–9  1–			-
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(6) Positive experiences Saved the life of a Service Member or civilian 1–9		• •	1-3, 7-9
	(6) Positive experiences		
	1	Provided aid to the wounded	1–5

Two of the combat categories used by Wilk and colleagues (fighting and death or injury of others) can be replicated exactly using the BHNAS items for all versions of the survey. The other categories can be approximated using the BHNAS items.

#### **Experiences of Intense Fear, Helplessness, or Horror**

During the transition from the Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition (DSM-III-R; American Psychological Association, 1987) to DSM-IV (American Psychological Association, 1994), experiences of fear, helplessness, and horror were incorporated into the diagnostic criteria for PTSD (Criterion A2). This addition to the diagnostic criteria has been retained in the most current revision of DSM-IV-TR (American Psychological Association, 2000).

The BHNAS 9 survey assesses experiences of fear, helplessness, and horror using the following item:

• Did any experience on this deployment cause you to feel intense fear, helplessness, or horror? (yes/no).

This item has been used on all versions of the BHNAS. It also appears on earlier versions of the Army MHAT surveys (MHAT, 2008, 2009), but not on the more recent MHAT surveys (e.g., J-MHAT, 2011).

#### **Deployment-Related Stressors**

Deployment-related stressors are concerns that are associated with deployment but are not directly related to combat exposure. Deployment-related stressors are measured on the BHNAS using 11 questions that ask respondents about various noncombat stressors. These items were drawn from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). They have been used consistently on all versions of the BHNAS instrument. The 11 deployment-related stressor items are as follows:

- Being separated from family
- Illness or problems back home
- Boring and repetitive work
- Difficulties communicating back home (e.g., phone calls, e-mail, mail)
- Uncertain redeployment date
- Lack of privacy or personal space
- Lack of time off for personal time
- Not having the right equipment, tools, or repair parts
- Not getting enough sleep
- Continuous operations
- Long deployment length

On BHNAS 9, participants are asked to rate how much trouble or concern has been caused by each of the deployment-related stressors shown above using a five-point scale (1 = Very low to 5)= Very high). A deployment-related stressors score is created by summing across all items. Higher numbers on the scale indicate a higher level of deployment-related stressors. Similar sets of items have also been used in other studies of military combat veterans (Booth-Kewley, Larson, Highfill-McRoy, Garland, & Gaskin, 2010a, 2010b).

#### Mental Health Care Stigma and Barriers to Care

Across different versions of the BHNAS, mental health stigma and barriers to care have been measured using between 14 and 17 items that ask about possible reasons for not seeking mental health care. These items were adapted from those used on the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). Similar sets of items have been used by other researchers and have been shown to be a reliable measure of mental health stigma (Britt, 2000; Hoge et al., 2004). In BHNAS 9, this topic is assessed using 14 items. The introductory stem reads, "Rate each of the

following factors that might affect your decision to receive mental health counseling or services if you ever had a problem on this deployment." The 14 stigma items on BHNAS 9 are as follows:

- I don't trust mental health professionals.
- Mental health services aren't available.
- I don't know where to get help.
- It is difficult to get an appointment.
- There would be difficulty getting time off work for treatment.
- It's too difficult to get to the location where the mental health specialist is.
- It would be too embarrassing.
- It would harm my career.
- Members of my unit might have less confidence in me.
- My unit leadership might treat me differently.
- My leaders would blame me for the problem.
- I would be seen as weak.
- It might affect my security clearance.
- My leaders discourage the use of mental health services.

Each of the stigma items is rated on a five-point scale (1 = Strongly disagree to 5 = Stronglyagree). A mental health care stigma score is created by summing across all items, with higher scores indicating a higher level of perceived stigma regarding the use of mental health care.

#### **Amount of Sleep and Sleep Deficit**

The number of hours respondents typically sleep and their sleep deficit are assessed on BHNAS 9 using two items:

- On average, how many hours of sleep do you get per day (during this deployment)? (1 = 3 or fewer to 6 = 8 or more)
- On average, how many hours of sleep do you need per day in order to feel well-rested? (1 = 3 or fewer to 6 = 8 or more)

These two sleep items, presented with six response options, were drawn from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). These items were first introduced in BHNAS 4, and have appeared on all subsequent versions of the survey. Based on these two items, a sleep deficit classification is created to indicate which respondents report getting fewer hours of sleep than they need to feel well-rested.

#### **Sleep Difficulties**

Sleep difficulties are assessed on the ninth version of the BHNAS using two questions drawn from earlier versions of the Army MHAT surveys (MHAT, 2008, 2009):

- In the last 2 weeks on deployment, please rate your difficulty falling as leep (1 = None) to 5 = Very severe).
- In the last 2 weeks on deployment, please rate your difficulty staying as leep (1 = None) to 5 = Very severe).

These two sleep items have been used consistently on all versions of the BHNAS instrument. They are not used on the more recent versions of the Army MHAT (e.g., J-MHAT, 2011).

#### **Sleep Medication Use**

The ninth version of the BHNAS includes one question about the use of sleep medications. This item was drawn from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). It was first introduced in BHNAS 4 and has been used consistently on all subsequent versions of the BHNAS. Respondents who answer "yes" to this item are also asked to specify the medication(s) they used:

• Have you taken any medication for a sleep problem during this deployment? (yes/no).

#### **Personal and Unit Morale**

BHNAS 9 includes questions about personal morale and unit morale. These two questions were drawn from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009), and have been used consistently on all versions of the BHNAS.

Rate your morale:

- Your personal morale (1 = Very low to 5 = Very high).
- Morale in your unit (the team that you serve with most closely) (1 = Very low to 5 = Very low to 5)high).

#### **Unit Cohesion**

The BHNAS 9 instrument includes a core set of six items that assess unit cohesion. These items were taken directly from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009) and have been used consistently on all versions of the BHNAS. An overall unit cohesion summary score is created by summing across the six items. Higher scores on the scale indicate a higher level of unit cohesion. The introductory stem reads, "Tell us how much you DISAGREE or AGREE with the statements below about your military job." The six unit cohesion items are as follows:

- The members of my unit are cooperative with each other  $(1 = Strongly\ disagree\ to\ 5 =$ Strongly agree).
- The members of my unit know that they can depend on each other (1 = Strongly disagree)to 5 = Strongly agree).
- The members of my unit stand up for each other (1 = Strongly disagree to 5 = Strongly disagragree).

- I think my unit would do or did an excellent job in combat (1 = Strongly disagree to 5 = Strongly agree).
- I think the level of training in this unit is high (1 = Strongly disagree to 5 = Strongly disagree)
- I have real confidence in my unit's ability to perform its mission (1 = Strongly disagree to 5 = Strongly agree).

In addition to the core set of items shown above, one additional unit cohesion item appears in the more recent versions of the BHNAS (since BHNAS 4). This item uses the same introductory stem as the core set of unit cohesion items. It was developed specifically for the BHNAS, and was not used in the MHAT surveys.

• The members of my unit would risk their lives for each other (1 = Strongly disagree to 5) = *Strongly agree*).

#### **Attitudes Toward Leadership**

One extensive section of the BHNAS 9 survey measures respondents' attitudes toward leadership. The items that have been used on the BHNAS to assess attitudes toward leadership have been similar but not entirely consistent across different versions of the survey. However, a common core of eight leadership items (shown below) has been used on all versions of the survey since its inception. These items were adapted from the leadership items used in the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009).

On the ninth version of the BHNAS, attitudes toward officer and senior enlisted leadership are assessed separately. This has been the case on all versions of the BHNAS except for BHNAS 4 (which used the same eight items but had respondents rate their leadership at a more global level by asking about their "senior leadership").

On BHNAS 9, participants are asked to rate a set of eight items on a five-point scale (1 = Never)to 5 = Always), once for officer leadership and once for senior enlisted leadership. The items are identical for both sets; only the stem that refers to either officer leadership or senior enlisted leadership is different.

The leadership items are preceded by the following item stem, "Thinking about your unit, rate how often your officer leaders (senior enlisted leaders) do the following":

- Tell Service Members when they have done a good job (1 = Never to 5 = Always).
- Embarrass Service Members in front of other Service Members (reversed) (1 = Never to 5)= Always).
- Try to look good to higher-ups by assigning extra missions or details to Service Members (reversed) (1 = Never to 5 = Always).
- Exhibit clear thinking and reasonable action under stress (1 = Never to 5 = Always).
- Show favoritism to certain members in the unit (reversed) (1 = Never to 5 = Always).
- Are concerned about the safety of Service Members (1 = Never to 5 = Always).

- Ensure that Service Members do not assume unnecessary risks when conducting missions (1 = Never to 5 = Always).
- Protect the unit from receiving too many taskings (1 = Never to 5 = Always).

Using these two sets of items, two overall attitudes toward leadership scores are created: one for attitudes toward officer leadership and one for attitudes toward senior enlisted leadership. The scale scores are created by summing across the items in each of the two sets, with higher numbers indicating more positive attitudes toward leadership. The three negatively worded items are reverse coded before the scale scores are created.

In addition to the core set of eight items shown above, one other leadership item (shown below) appears only in the more recent versions of the survey, including BHNAS 9. This item was first added to BHNAS 4 and has appeared in all subsequent versions of the survey. It uses the exact same introductory stem as the eight items shown above: "Thinking about your unit, rate how often...," and like the other items, it appears twice, once for officer leadership and once for senior enlisted leadership:

• Listen to recommendations from subordinates (1 = Never to 5 = Always).

Because the "listen to recommendations from subordinates" item was not included in all versions of the BHNAS, it is not used in computation of the leadership summary scores; only the eight core items (shown above) are used. This item does not appear on the Army MHAT surveys.

In the ninth version of the BHNAS, two survey items assess respondents' overall satisfaction with the quality of their leadership. One item asks about officer leadership, and the other asks about senior enlisted leadership. These overall satisfaction items were developed specifically for the BHNAS and are not used on the Army MHAT surveys. They were first introduced in BHNAS 5 and have been included on all subsequent versions of the survey:

- Overall, how satisfied are you with the quality of your officer leadership? (1 = Very)dissatisfied to 5 = Very satisfied).
- Overall, how satisfied are you with the quality of the senior enlisted leadership of your unit? (1 = Very dissatisfied to 5 = Very satisfied).

Because combat-deployed Navy sailors may have leaders in their chain of command from any military service branch, the service branch of the respondents' leaders is also assessed on BHNAS 9:

- In what branch is your officer leadership? (U.S. Navy, U.S. Marine Corps, U.S. Army, U.S. Air Force, Other).
- In what branch is the senior enlisted leadership of your unit? (U.S. Navy, U.S. Marine Corps, U.S. Army, U.S. Air Force, Other).

The two items shown above were first introduced in BHNAS 5 and have been used on all subsequent versions. They were developed specifically for the BHNAS and do not appear on the Army MHAT surveys.

#### **Positive Effects of Deployment**

On the ninth version of the BHNAS, four items are used to assess positive effects of deployment. These four items were drawn from the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009). Although some earlier versions of the BHNAS included a few additional items on this topic, this core set of four items (shown below) has been used on all versions of the survey:

- Overall, this deployment has had a positive effect on my life (1 = Strongly disagree to 5 = Strongly agree).
- I deal with stress better because of this deployment (1 = Strongly disagree to 5 = Strongly agree).
- I feel pride from my accomplishments during this deployment (1 = Strongly disagree to 5 = Strongly agree).
- This deployment has made me more confident in my abilities (1 = Strongly disagree to 5 = Strongly agree).

Responses to these four items are summed to form an overall positive effects of deployment scale score, with higher scores indicating a higher level of positive deployment experiences.

#### **Navy Support During Deployment**

Each version of the BHNAS has included some questions that assess satisfaction with Navy support for service members and their families during deployment. These items are of particular relevance for sailors who deploy to combat zones as IAs. On BHNAS 9, the following four items are used to assess this topic:

- I am satisfied with how my parent command back home has supported my family (1 = *Strongly disagree* to 5 = Strongly agree).
- I am pleased with how often my parent command back home has contacted me while on deployment (1 = Strongly disagree to 5 = Strongly agree).
- My parent command back home was supportive while I prepared for this deployment (1 = *Strongly disagree* to 5 = Strongly agree).
- I have been satisfied with how the Navy has helped my family during this deployment (1 = *Strongly disagree* to 5 = *Strongly agree*).

The four core items shown above were first introduced in BHNAS 4 and have been used ever since. (Prior to BHNAS 4, two items were used to assess this topic, but they were different from those shown above.) These items were developed specifically for the BHNAS and are not used on the Army MHAT surveys. In recent administrations of the survey, this set of four core items has been used to compute a summary score reflecting how satisfied respondents are with the Navy support that they received. Higher scores on the scale indicate greater satisfaction with Navy support.

#### **Other Items**

Two items on BHNAS 9 were designed to measure respondents' perceptions that they made or are making a contribution to the military mission. These items were drawn from the more recent Army MHAT surveys (J-MHAT, 2011; MHAT, 2009), but did not appear on the earlier MHAT surveys. These two items were first introduced in BHNAS 4 and have been used consistently ever since:

- I feel that what I am doing during this mission is important (1 = *Strongly disagree* to 5 = *Strongly agree*).
- I am making a real contribution to accomplishing this mission (1 = Strongly disagree to 5 = Strongly agree).

BHNAS 9 also includes three additional items that assess issues related to training for deployment and working in one's occupational specialty:

- The pre-deployment training I received prepared me for this deployment assignment  $(1 = Strongly\ disagree\ to\ 5 = Strongly\ agree)$ .
- I am working in my occupational specialty during this deployment  $(1 = Strongly \ disagree$  to  $5 = Strongly \ agree)$ .
- I was well trained to do my job in-theater (1 = Strongly disagree to 5 = Strongly agree).

These three items were first introduced in BHNAS 5 and have been used consistently ever since. They were developed specifically for the BHNAS, and do not appear on the Army MHAT surveys. They are not used to compute a scale score.

#### **Comments**

At the end of the survey, respondents have the option to write open-ended comments on any topic. Used in conjunction with the quantitative data yielded by the BHNAS, these comments have been very useful for suggesting possible reasons for respondents' satisfaction or dissatisfaction with specific topics assessed by the survey (e.g., dissatisfaction with leadership, deployment-related stressors, and personal morale).

#### Discussion

Warfighter readiness is intrinsically linked with the physical and psychological health of service members. Consequently, preserving the psychological health of U.S. service members and their families is of paramount concern to military leaders, military medical providers, and the general public. One key step in protecting the psychological health of service members is the ability to determine the presence and correlates of mental health problems through routine monitoring and evaluation. When OEF/OIF expeditionary sailors were identified as a population that could potentially be at risk, the BHNAS instrument was designed specifically to monitor their psychological health. The BHNAS has been a central source of information about the mental health status of these sailors, and about their standing on specific risk and protective factors (e.g., combat exposure, attitudes toward leadership, unit cohesion, and positive deployment experiences) that impact mental health and morale. To our knowledge, no previous project has surveyed Navy expeditionary sailors while they were deployed to a theater of combat.

Mental health surveillance of service members deployed to combat zones is not unique to the Navy; rather, the Navy effort is modeled after the Army's MHAT program. Because the Navy BHNAS was based upon, and shares substantial content with the Army MHAT surveys (J-MHAT, 2011; MHAT, 2008, 2009), it has been possible to compare results from sailors who were assessed using the BHNAS with soldiers who were assessed using Army MHAT surveys. Additionally, because the BHNAS has now been in use since 2006, BHNAS data can be and have been used to assess trends over time among Navy expeditionary sailors on a variety of content domains, including mental disorders (e.g., PTSD, depression, and anxiety), combat exposure, deployment-related stressors, unit cohesion, and attitudes toward leadership. Furthermore, over the course of the BHNAS administrations, four primary mission types have become the focus of Navy leadership: Provincial Reconstruction Teams, Command and Staff, Medical, and Detainee Operations. The BHNAS data have also been used to make comparisons across these mission types, and to monitor longitudinally changes within these mission types. The ability to make such comparisons is a unique capability of the BHNAS instrument that has served to inform Navy leadership, and it has ultimately assisted in preserving the psychological health of U.S. Navy expeditionary sailors.

In conclusion, the BHNAS instrument has proved to be an effective tool for quantitatively assessing the status of Navy expeditionary sailors. The BHNAS has provided Navy line and medical leadership with a comprehensive snapshot of expeditionary sailors' psychological health and readiness. Currently, results from the BHNAS are the Navy's primary mode of surveillance on issues of psychological health among expeditionary sailors. The BHNAS findings are reviewed by Navy Surgeon General staff members at the end of each BHNAS administration cycle, and they have also been incorporated into U.S. Congressional testimonies by the Surgeon General on issues related to Navy medical readiness and behavioral health. The information that the BHNAS has provided to military leaders and policymakers has helped the Navy to make evidence-based decisions and policy changes impacting the psychological health of Navy expeditionary sailors. The results constitute actionable intelligence that has been used at the highest levels of the Navy to make substantial changes in deployment policies.

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#### Appendix Behavioral Health Needs Assessment Survey 9 (BHNAS 9)

## U.S. Navy Behavioral Health Needs Assessment

Privacy Statement: [A] This survey does not collect or maintain personally identifiable information and is therefore not subject to the provisions of the Privacy Act, 5 U.S.C. 552a. [B] Purpose: The purpose of this survey is to collect data to evaluate existing and proposed Department of Navy personnel policies, procedures, and programs. [C] Routine Uses: The information provided in this questionnaire will be analyzed by the Mobile Care Team (MCT) and Naval Health Research Center (NHRC). The data files will be maintained by MCT and NHRC where they may be used for determining changing trends in the Department of the Navy. [D] Anonymity: All responses will be held in confidence by the MCT and NHRC. Information you provide will be considered only when statistically summarized with the responses of others, and will not be attributable to any single individual. [E] Participation: Completion of this questionnaire is entirely voluntary. Failure to respond to any of the questions will NOT result in any penalties except possible lack of representation of your views in the final results and outcomes.

The purpose of this survey is to provide Navy leadership with information on the well-being of expeditionary Sailors like you and your needs in-theater during deployment.

Some things you need to know:

- This survey is **voluntary**. You are not required to complete it, but it will be helpful if you do.
- You may skip questions that you do not want to answer. However, keep in mind that the most
  meaningful results will come from those who complete the entire survey.
- This survey is **anonymous and confidential**. Do *not* write your name or any other personally identifying information on it. The chain of command will not see any individual surveys.

**Thank you** for taking the time to answer these questions. Your participation in the assessment will help improve training, policy, health care, and quality of life for all expeditionary Sailors.

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Postal Address: Navy MCT

Bagram Airfield APO AE 09354



Naval Health Research Center Dept 163 140 Sylvester Road San Diego, CA 92106-3521



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14. Name of your unit (team you serve with most closely) on this deployment:					15. Prin Camp M FOB Far	armal,	cation in-theater (	for example, NKC	, KAF	
16. For this deployment, please indicate the Month and Year you arrived in theater:  17. How many months have you been in-theater on this deployment? (for example, "07" months)			18. About boots on deployment example,	ground it suppo	19. Were yo "re-missioned unofficially reassigned why you arrived at	l" or nen				
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24. Did you experience any of the following during this deployment?	Never	1 Time	2 - 4 Times	5 - 9 Times	10 or More Times
a. Being attacked or ambusheda.	0	0	0	0	0
b. Seeing destroyed homes and villagesb.		0	0	0	0
c. Receiving small arms fire		0	0	0	0
d. Witnessing an accident which resulted in serious injury or deathd.	0	0	0	0	0
e. Witnessing violence within the local population or between ethnic groups .e.		0	0	0	0
f. Seeing dead or seriously injured Americans f.		0	0	0	0
<u> </u>					
g. Knowing someone seriously injured or killedg.	0	0	0	0	0
h. Participating in demining operationsh.	0	0	0	0	0
i. Improvised explosive device (IED) or booby trap exploded near youi.	0	0	0	0	0
j. Working in areas that were mined or had IED'sj.	0	0	0	0	0
k. Having hostile reactions from civiliansk.	0	0	0	0	0
1. Disarming civilians	0	0	0	0	0
m. Being in threatening situations where you were unable to respond					
because of rules of engagement		0	0	0	0
n. Shooting or directing fire at the enemyn.		0	0	0	0
o. Calling in fire on the enemyo.		0	0	0	0
p. Engaging in hand-to-hand combatp.		0	0	0	0
q. Clearing/searching homes or buildingsq.		0	0	0	0
r. Clearing/searching caves or bunkers	0	0	0	0	0
s. Being wounded/injured s.		0	0	0	0
t. Seeing ill/injured women or children who you were unable to helpt.		0	0	0	0
u. Receiving incoming artillery, rocket, or mortar fire		0	0	0	0
v. Being directly responsible for the death of an enemy combatantv.		0	0	0	0
w. Having a member of your own unit become a casualtyw.	_	0	0	0	0
x. Had a close call, dud land near youx.	0	0	0	0	0
v. Had a alosa call conjument shot off your hadr.	0	0	0	0	_
y. Had a close call, equipment shot off your bodyy.		0	0	0	0
z. Had a close call, was shot or hit but protective gear saved youz.		0	0	0	0
aa. Encountering sniper fire		0	0	0	0
bb. Seeing a unit member blown up or burned alive		0	0	0	0
cc. Had a buddy shot or hit who was near you		0	0	0	0
dd. Informed unit members or friends of a unit member's deathdd.	0	0	0	0	0
ee. Saved the life of a Service Member or civilianee.	0	0	0	0	0
ff. Seeing dead bodies or human remains		0	0	0	0
		0	0	0	0
gg. Handling or uncovering human remainsgg.  hh. Being physically moved or knocked over from an explosionhh.		0	0	0	0
ii. Physically assaulted by another U.S. Service Memberii.		0	0	0	0
jj. Harassed, ridiculed, or hazed by another U.S. Service Memberjj.		0	0	0	0
kk. Witnessing brutality or mistreatment toward noncombatantskk.				_	
AA. WITHCSSING DITUTALITY OF HIISTICATHICHT TOWARD HORCOHIDATAHISKK.	0	0	0	0	0

O No 3 or More 0 1 2 Times **26.** During this deployment, how many times were you... a. Inside a vehicle when it was damaged by a blast?..... 0 0 0 O b. Within 50 meters of a blast explosion?.... 0 O O 0 c. Injured from blast/explosion, fragment/shrapnel, or bullet? ..... O O O 0 d. Injured from other combat-related incident (fall, etc)?..... 0 O 0 0 e. Injured from other (non-combat) work or sports incident?..... O O O 0 Yes <u>No</u> **27.** Did any event during this deployment involve... a. Injury to your head? O O b. A blow or jolt to your head? O O c. Being dazed, confused, or "seeing stars"? 0 0 d. Not remembering the injury? O O e. Losing consciousness from being knocked out?.... O O f. Losing consciousness but not from being knocked out? O O g. Evaluation by any medical professional for a TBI or concussion?........ 0 O h. A positive diagnosis for a TBI or concussion? O O Very Very **28.** Think about your experiences on **this deployment**. Rate how much Medium High Low Low High TROUBLE or CONCERN has been caused to you by: a. Being separated from family..... 0 O O 0 O b. Illness or problems back home..... 0 O O O O c. Boring and repetitive work..... 0 0 0 0 0 d. Difficulties communicating back home (phone calls, email, mail, etc)... 0 0 O O O e. Uncertain redeployment date..... O O O O 0 f. Lack of privacy or personal space ..... 0 0 O O 0 g. Lack of time off, for personal time..... O 0 O O O h. Not having the right equipment, tools, or repair parts..... 0 O 0 O O i. Not getting enough sleep 0 O 0 O O j. Continuous operations..... O 0 O O 0 k. Long deployment length..... O O O 2 5 or More 1 3 or 4 Times **Times** Never <u>Time</u> <u>Times</u> **29.** How often in the **PAST MONTH** did you: O O 0 0 0 a. Get angry at someone in your unit and yell or shout at them?...... b. Get angry with someone in your unit and kick or smash something, slam the door, punch the wall, etc.? O O 0 0 0 c. Get into a fight with someone in your unit and hit the person? ...... 0 O 0 0 0 d. Threaten someone in your unit with physical violence?..... O 0 O 0

Yes

O

**25.** Did any experience on this deployment cause you to feel intense fear, helplessness, or horror?

<b>30.</b> Please indicate how much you DISAGREE or AGREE with the following:	Strongly <u>Disagree</u>	Disagree	Neither Agree nor <u>Disagree</u>	Agree	Strongly Agree
<ul> <li>a. Overall, this deployment has had a positive effect on my life</li> <li>b. I deal with stress better because of this deployment</li> <li>c. I feel pride from my accomplishments during this deployment</li> <li>d. This deployment has made me more confident in my abilities</li> </ul>	0 0 0	0 0 0	0 0 0	0 0 0 0	0 0 0
<ul> <li>e. I feel that what I am doing during this mission is important</li> <li>f. I am making a real contribution to accomplishing this mission</li> <li>g. I am satisfied with how my parent command back home has</li> </ul>	0	0	0	0	0
supported my familyh. I am pleased with how often my parent command back home has	0	0	0	0	0
i. My parent command back home was supportive while I prepared for	0	0	0	0	0
j. I have been satisfied with how the Navy has helped my family	0	0	0	0	0
during this deployment	0	0	0	0	0
was adequate	0	0	0	0	0
assistance	0	0	0	0	0
deployment assignment	0 0 0	0 0	0 0	0	0 0 0
31. Below is a list of reactions that Service Members sometimes experience following deployment or in response to other stressful life experiences. Please indicate how much you have been bothered by each	Not At Al		Moderately	Quite A Bit	Extremely
problem in the past month.  a. Repeated, disturbing memories, thoughts, or images of a stressful					
b. Repeated, disturbing dreams of a stressful experience	0	0	0	0	0
c. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)	0	0	0	0	0
d. Feeling very upset when something reminded you of a stressful experience	0	0	0	0	0
<ul> <li>Having physical reactions (like heart pounding, trouble breathing, sweating) when something reminded you of a stressful experience</li> </ul>	0	0	0	0	0
<ul> <li>f. Avoiding thinking about or talking about a stressful experience or avoiding having feelings related to it</li> </ul>	0	0	0	0	0
g. Avoiding activities or situations because they reminded you of a stressful experience	0	0	0	0	0
<ul><li>h. Trouble remembering important parts of a stressful experience</li><li>i. Loss of interest in activities you used to enjoy</li></ul>	0	0	0	0	0
j. Feeling distant or cut off from other peoplek. Feeling emotionally numb or being unable to have loving feelings for		O	O	Ō	Ō
those close to you	0	0 0	0 0 0	0	0 0 0
n. Feeling irritable or having angry outbursts	0	0	0	0	0
o. Having difficulty concentrating  p. Being "super alert" or watchful or on guard  q. Feeling jumpy or easily startled	0	0 0	0	0	0 0 0

<b>32.</b> Over the LAST 4 WEEKS, how often have you been bothered by any of the following problems?	Not <u>At All</u>	Few or Several <u>Days</u>	More Than Half the <u>Days</u>	Nearly Every <u>Day</u>
a. Feeling nervous, anxious, on edge, or worrying a lot about different	0	0	0	0
things	0	0	0	0
b. Little interest or pleasure in doing things	0	0	0	0
c. Feeling down, depressed, or hopeless	O	O	O	O
d. Trouble falling or staying asleep, or sleeping too much	0	0	0	0
e. Feeling tired or having little energy	0	0	0	0
f. Poor appetite or overeating	0	0	0	0
<ul> <li>g. Feeling bad about yourself – or that you are a failure or have let yourself or your family down</li></ul>	0	0	0	0
watching television	0	0	0	0
	-	0	0	0
i. Moving or speaking so slowly that other people could have noticed	0	0	0	0
j. Feeling restless so that it's hard to sit still	0	O	O	O
k. Becoming easily annoyed or irritable	0	0	0	0
Muscle tension, aches or soreness	0	0	0	0
m. Thoughts that you would be better off dead or of hurting yourself in				
some way	0	0	0	0

**33.** If you checked off ANY of the above problems (question 32a-m), how difficult have these problems made it for you to perform your duty or to get along with others?

Very difficult

Extremely difficult

Somewhat difficult

Not at all difficult

0	0	0		0		
<b>34.</b> Tell us how much you <b>DISAGREE</b> statements below about your military job.	or AGREE with the	Strongly <u>Disagree</u>	Disagree	Neither Agree nor <u>Disagree</u>	Agree	Strongly <u>Agree</u>
<ul><li>a. The members of my unit are cooperative</li><li>b. The members of my unit know that the</li></ul>		0	0	0	0	0
other	*	0	0	0	0	0
c. The members of my unit stand up for e	ach other	0	0	0	0	0
d. I think my unit would do or did an exce	ellent job in combat	0	0	0	0	0
e. I think the level of training in this unit		0	0	0	0	0
f. I have real confidence in my unit's abil		0	0	0	0	0
g. The members of my unit would risk the	eir lives for each other	0	0	0	0	0

<b>35.</b> In what branch is your <b>officer</b> leadership?			<b>36.</b> Overall, how satisfied are you with the quality of your <b>officer</b> leadership?							
	(Mar	k all that apply)	the quality of your			_	_			
0	a. U	.S. Navy		V	ery Dissa		0			
0	b. U	.S. Marine Corps				tisfied	0			
0	c. U	.S. Army				Neutral	0			
0	d. U	.S. Air Force				tisfied	0			
0	e. O	ther:			Very Sa	tisfied	0			
37. Thinking a the following:	bout y	our unit, rate how often your of	ficer <u>leaders</u> do	Never	Seldom	Sometimes	Often	Always		
a. Tell Service	Memi	bers when they have done a good	d job	0	0	0	0	0		
b. Embarrass S	ervice	Members in front of other Serv	ice Members	0	0	0	0	0		
c. Try to look g	good t	o higher-ups by assigning extra	missions or	0	0	0	_	0		
		Members		0	0	0	0	0		
		ing and reasonable action under certain members in the unit		0	0	0	0	0		
		out the safety of Service Member		Ö	0	Ö	Ö	Ö		
		e Members do not assume unnec								
when condu	cting 1	missions		0	0	0	0	0		
		ndations from subordinates		0	0	0	0	0		
1. Protect the u	ınıt iro	om receiving too many taskings.		0	0	0	0	0		
<b>38.</b> In what brayour unit?	onch is	the senior enlisted leadership of (Mark all that apply) a. U.S. Navy b. U.S. Marine Corps c. U.S. Army	of 39. Overall are you with the senior en of your unit?	the quali	ity of	Very Di Di	ssatisfic Neutr	ed al	0 0 0	
	0	d. U.S. Air Force				37	Satisfic		0	
	0	e. Other:				very	Satisfic	ea	0	
		c. saler								
40. Thinking a leaders do the fo	-	our unit, rate how often the <u>seni</u> ng:	or <u>enlisted</u>	Never	Seldom	Sometimes	Often	Always		
			4:-1.	0	0	0	_	0		
		bers when they have done a good Members in front of other Serv		0	0	0	0	0		
		o higher-ups by assigning extra		Ŭ	Ü	Ŭ				
details to Se	rvice l	Members		0	0	0	0	0		
		ing and reasonable action under		0	0	0	0	0		
		certain members in the unit		0	0	0	0	0		
		out the safety of Service Member		0	0	0	O	0		
		e Members do not assume unneo nissions		0	0	0	0	0		
		ndations from subordinates		Ö	0	0	Ö	0		
		m receiving too many taskings.		0	0	Ō	Ô	0		

0		ot applicable; no ch			n)							
0 0 0	3. O 4. P 5. P	ave chronic pain, but ver-the-counter drug rescription painkille rescription opioid/natethadone).  In the (specify all):	gs (including Aspir rs that are not opin rcotic painkiller	rin, Tylenol, M oids (includir (including Ox	ng Cele yConti	ebrex, V n, Perco	ioxx, B	extra,				eine,
Ö		nknown what medic						(Not	Applicable	— e:		
	<b>41b.</b> v	Vere the medication	s prescribed in the		<u>Yes</u>	<u>No</u>					or not presc	ribed)
					0	0	0					
0	COI No Yes; s <sub>l</sub>	ve you taken any membat stress problem pecify type of med:* ample, anti-depressant.		yment?								
0	dui No Yes;	ve you taken any mering this deployment specify med names: les: Ambien, Nyquil.										
44.	On averag	e, how many hours	of sleep do you	3 or Fewer	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	8 or More			
		(during this deployn y in order to feel we		0 0	0	0	0	0	0			
45.	In the pas	t 2 weeks on deploy	ment, please rate	your								
		a. Difficulty		None Mild oderate Severe Severe	0 0 0 0	b.	Difficu	lty <b>st</b>	<b>aying</b> asl	Mo	None Mild oderate Severe Severe	0 0 0 0

**41a.** If you have chronic pain that occurs constantly (daily) or frequently flares up (across 3 or more months), what

types of medication are you taking for your pain? (Please mark all that apply.)

	nich best describes your ex motional, alcohol, or famil	<b>47.</b> Are you currently interested in receiving help for a stress, emotional, alcohol, or family problem?								
0 0 0 0 0 0	(No such problem) I wasn't interested in rece I wanted and received he  I wanted but did not seek I wanted and sought help	lp: from a from a from bo help.	medical oth.	l person.	n.	(No	such prob	No	0 0 0	
decision t	e each of the following fact to receive mental health con a problem on this deploym	unseling or				Strongly Disagree	Disagree	Neither Agree nor <u>Disagree</u>	Agree	Strongly Agree
b. Menta c. I don' d. It is di e. There f. It's to specia g. It wou h. It wou i. Memb j. My ur k. My le l. I wou m. It mig	a. I don't trust mental health professionals b. Mental health services aren't available c. I don't know where to get help d. It is difficult to get an appointment e. There would be difficulty getting time off work for treatment f. It's too difficult to get to the location where the mental health specialist is g. It would be too embarrassing h. It would harm my career i. Members of my unit might have less confidence in me j. My unit leadership might treat me differently k. My leaders would blame me for the problem l. I would be seen as weak m. It might affect my security clearance n. My leaders discourage the use of mental health services							00000 00000000	00000 00000000	00000 00000000
<b>49.</b> Rate	e your morale:	Very Low	Low	Medium	<u>High</u>	Very Hig	<u>h</u>			
a. Your	personal morale.	0	0	0	0	0				
	tle in your unit (the team serve with most closely).	0	0	0	0	0				

## Thank you for completing this survey!

## Your input is important to improving conditions for you and all expeditionary personnel.

Please provide comments on any special concerns in the space below.

Comments:	

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#### 13. SUPPLEMENTARY NOTES

#### 14. ABSTRACT

Preserving the mental health of U.S. military service members and their families is of paramount concern to military leaders, military medical providers, and the general public. When expeditionary Navy sailors deployed to combat zones in Afghanistan and Iraq were identified as a population that could potentially be at risk for mental health problems, the Behavioral Health Needs Assessment Survey (BHNAS) instrument was developed to monitor their mental health. The BHNAS is an anonymous survey that assesses the mental health, morale, and deployment-related stressors of Navy personnel who deploy to combat zones. The BHNAS was developed in response to a tasker that was issued by the Chief of Naval Operations. First administered to expeditionary Navy sailors in December 2006, the BHNAS instrument was designed to closely parallel the Army Mental Health Advisory Team (MHAT) survey. Like the Army MHAT, the Navy BHNAS assesses mental health problems as well as a variety of other content areas, including attitudes toward leadership, unit cohesion, combat experiences, deployment-related stressors, traumatic brain injury, and sleep problems. This report provides detailed information about the ninth version of the BHNAS instrument, including the content areas, scales, and items that make up the survey. The sources of survey items and scales are provided, and changes in content that have occurred across versions of the BHNAS are described.

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